Mr. Gary Mongeon Marietta Redevelopment Corporation 205 Lawrence Street, P.O. Box 609 Marietta, Georgia 30061

Report of Limited Asbestos and Lead-Based Paint Screen
Manget Street Redevelopment Project
Cobb County, Georgia
Geo-Hydro Project Number 057929.01

Dear Mr. Mongeon:

Geo-Hydro Engineers, Inc. has completed the requested limited asbestos and lead-based paint screen for the above referenced location. Representative apartment buildings 477, 487, and 494 Frasier Street, and 275 Manget Street were surveyed for suspect asbestos containing materials and suspect lead-based paint. Representative single-family residences 489 and 495 Haley Street were surveyed for suspect asbestos containing materials and suspect lead-based paint. This report and our observations are intended for the benefit of the City of Marietta and the Marietta Redevelopment Corporation. This report may not be used or relied upon by any other party without Geo-Hydro's prior written consent.

### SITE DESCRIPTION

The subject site encompasses approximately 7.87 acres and consists of single-family homes, apartment buildings, and wooded land located within and adjacent to the block formed by Manget Street, Frasier Street, Haley Street, and South Avenue in Marietta, Georgia.

477 Frasier Street Apartment: The 477 Frasier Street quadruplex apartment is a two-story building built during the 1940's. The exterior facade includes painted brick and vinyl siding. The vinyl siding has been installed over painted wood siding. The building is covered by a shingle roof system. No pipe insulation was observed in the crawl space except for fiberglass duct insulation wrapped around heating/air conditioning ducts. Interior ceiling and walls are painted drywall with wood baseboards. Some walls and ceilings are covered with textured paint. The interior floors are wood. Some floors are covered with 1-foot by 1-foot vinyl floor tiles. Heating and plumbing systems were observed either without insulation or were insulated with fiberglass.



487 Frasier Street Apartment: The 487 Frasier Street quadruplex apartment is a two-story building built during the 1940's. The exterior facade includes painted brick and vinyl siding. The vinyl siding has been installed over a fibrous siding. The building is covered by a shingle roof system. No pipe insulation was observed in the crawl space except for fiberglass duct insulation wrapped around heating/air conditioning ducts. Interior ceiling and walls are painted drywall with wood baseboards. The interior floors are wood. Some floors are covered with unglued, tacked-on carpet. Some floors are covered by 1-foot by 1-foot vinyl floor tiles. Heating and plumbing systems were observed either without insulation or were insulated with fiberglass.

494 Frasier Street Apartment: The 494 Frasier Street quadruplex apartment is a two-story building built during the 1940's. The exterior facade includes painted brick and vinyl siding. The vinyl siding has been installed over a fibrous siding. The building is covered by a shingle roof system. No pipe insulation was observed in the crawl space except for fiberglass duct insulation wrapped around heating/air conditioning ducts. Interior ceiling and walls are painted drywall with wood baseboards. The vacant, partially demolished, first floor apartment along the west side of the building was surveyed. The apartment's interior floors are concrete and wood. Floor tile was observed on some of the floors. Heating and plumbing systems were observed either without insulation or were insulated with fiberglass.

275 Manget Street Apartment: The 275 Manget Street quadruplex apartment is a two-story building built during the 1940's. The exterior facade includes brick and fibrous siding. The fibrous siding has been installed over cement board siding. The building is covered by a shingle roof system. No pipe insulation was observed in the crawl space except for fiberglass duct insulation wrapped around heating/air conditioning ducts. Interior ceiling and walls are painted drywall with wood baseboards. The vacant first floor apartment along the west side of the building was surveyed. The apartment's interior floors are concrete and wood. Some floors are covered by 1-foot by 1-foot vinyl floor tiles. Heating and plumbing systems were observed either without insulation or were insulated with fiberglass.

489 Haley Street Single-Family Residence: The 489 Haley Street single-family residence is an abandoned one-story wood frame building built during the 1940's. The exterior facade includes wood and concrete block. The wood exterior is sheathed in asphaltic shingles. The building is covered by a shingle roof system. No pipe insulation was observed in the crawl space. Interior ceilings and walls are painted wood or painted drywall. The interior floors are wood. Floors are covered by tacked-on carpet, floor sheeting, and floor tiles. Heating and plumbing systems were observed either without insulation or were insulated with fiberglass.

495 Haley Street Single-Family Residence: The 495 Haley Street single-family residence is an abandoned, partially demolished, one-story wood frame building built during the 1940's. The exterior facade includes wood and concrete block. The wood exterior is sheathed in asphaltic shingles. The building is covered by a shingle roof system. Interior ceilings and walls are wood covered with painted drywall. The interior floors are wood covered by tacked-on carpet. The kitchen floor is covered by floor sheeting. Heating and plumbing systems were observed without insulation.



### **PROCEDURES**

### Limited Asbestos and Lead-Based Paint Screen

Mr. John F. O'Brien, a certified Asbestos-In-Buildings Inspector (Toxic Substances Control Act (TSCA) Title II), performed the limited asbestos and lead-based paint screen on February 15 and 16, 2005. The asbestos screen was performed in general accordance with ASTM's *Draft Standard Guide for Limited Asbestos Screens of Buildings*, dated April 23, 2003. Mr. O'Brien expended reasonable time and effort to identify and sample as many homogeneous areas of suspect asbestos containing building materials (ACBMs) and lead-based paint (LBP) as possible. Visually identified suspect materials were sampled to represent conditions of accessible building space. Nevertheless, there remains a possibility that ACBMs and LBP are present that were undetected or inaccessible during the site visit.

Fifty-two samples of suspect ACBMs were collected from the subject structures and analyzed for asbestos. The suspect asbestos samples were submitted to Materials Analytical Services, Inc. (MAS) in Suwanee, Georgia. MAS is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) and the American Industrial Hygiene Association (AIHA) for bulk asbestos fiber analysis. The samples were analyzed for asbestos content using polarized light microscopy (PLM) and dispersion staining (EPA Method 600/R-93/116).

A total of ten paint chip samples were collected from the subject buildings for total lead analysis. The paint chip samples were submitted to the Environmental Services Network (ESN) laboratory in Kennesaw, Georgia. The samples were analyzed for total lead (EPD Method 6010B). During transportation and storage, a chain-of-custody form was maintained and signed by each individual in possession of the samples. Copies of the analytical test results and chain-of-custody form are included in the Appendix.

### **FINDINGS**

### **Asbestos Containing Building Materials**

The ACBM samples and corresponding percent (%) of asbestos detected are noted below:

### **477 Frasier Street Apartment:**

Stippled Ceiling/Drywall (HA602-1): Laboratory analysis detected 4% chrysotile asbestos in the skim coat between the stippled ceiling material and the drywall in sample HA602-1. No asbestos was detected in stippled ceiling/drywall sample HA602-2, indicating this ceiling may have been from a more recent renovation. Unless further asbestos sampling is conducted, the detection of asbestos in sample HA602-1 indicates the stippled ceilings observed in the apartment buildings of the subject property should be presumed to be a Regulated Asbestos-Containing Material (RACM) containing



more than 1% asbestos with a high probability of becoming crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations.

Popcorn Ceiling/Drywall (HA603-1): Laboratory analysis detected 5% chrysotile asbestos in the skim coats between popcorn ceiling finish and the drywall. No asbestos was detected in popcorn ceiling/drywall sample HA603-2, indicating this ceiling may have been from a more recent renovation. Unless further asbestos sampling is conducted, the detection of asbestos in sample HA603-1 indicates the popcorn ceilings observed in the apartment buildings of the subject property should be presumed to be a RACM containing more than 1% asbestos with a high probability of becoming crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations.

Textured Drywall Wall (HA604-1 and HA604-2): Laboratory analysis detected 3% chrysotile asbestos in the skim coat between textured paints and the drywall. Unless further asbestos sampling is conducted, the detection of asbestos in sample HA604-1 and HA604-2 indicates the textured drywall walls observed in the apartment buildings of the subject property should be presumed to be a RACM containing more than 1% asbestos with a high probability of becoming crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations.

### 487 Frasier Street Apartment:

<u>Textured Ceiling/Drywall/Joint Compound (HA5-1)</u>: Laboratory analysis detected 3% chrysotile asbestos in the textured ceiling/joint compound. Unless further asbestos sampling is conducted, the detection of asbestos in sample HA5-1 indicates the textured ceilings observed in the apartment buildings of the subject property should be presumed to be a RACM containing more than 1% asbestos with a high probability of becoming crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations.

### **494 Frasier Street Apartment:**

Floor Tile (Beige & Green)/Mastic (Brown) (HA401-1): Laboratory analysis detected 15% and 18% chrysotile asbestos in the beige and green floor tiles and attached mastics. Unless further asbestos sampling is conducted, the detection of asbestos in sample HA401-1 indicates the floor tiles and mastics observed in the apartment buildings of the subject property should be presumed to be a Category I non-friable ACM as long as the floor tiles are maintained in place or removed using methods that will not cause the tiles to be friable.

<u>Drywall Wall (HA402-2)</u>: Laboratory analysis detected 4% chrysotile asbestos in drywall sample HA402-2. No asbestos was detected in drywall sample HA402-1, indicating this wall may have been installed during a more recent renovation. Unless further asbestos sampling is conducted, the detection of asbestos in sample HA402-2 indicates the drywall walls observed in the apartment



buildings of the subject property should be presumed to be a RACM containing more than 1% asbestos with a high probability of becoming crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations.

### 275 Manget Street Apartment:

Cement Board Siding (HA502-1): Laboratory analysis detected 20% chrysotile asbestos in the cement board siding. Unless further asbestos sampling is conducted, the detection of asbestos in sample HA502-1 indicates the cement board siding observed on the apartment buildings of the subject property should be presumed to be a Category I non-friable ACM as long as the cement board siding is maintained in place or removed using methods that will not cause the siding to be friable.

### 489 Haley Street Single-Family Residence:

Roof Shingle/Roof Paper (HA300-1): Laboratory analysis detected 7% chrysotile asbestos in the mastic observed on the roof shingle/roof paper sample. Unless further asbestos sampling is conducted, the detection of asbestos in sample HA300-1 indicates the roof mastic observed on the single-family residences of the subject property should be presumed to be a Category I non-friable ACM as long as the shingle roof system is maintained in place or removed using methods that will not cause the shingle roof system to be friable.

Floor Tile (Beige)/Mastic (Black) (HA305-1): Laboratory analysis detected 5% chrysotile asbestos in the beige floor tile. Unless further asbestos sampling is conducted, the detection of asbestos in sample HA305-1 indicates the floor tiles observed in the single-family residences of the subject property should be presumed to be a Category I non-friable ACM as long as the floor tiles are maintained in place or removed using methods that will not cause the tiles to be friable.

Floor Tile (Beige)/Mastic (Brown) (HA308-1): Laboratory analysis detected 5% chrysotile asbestos in the beige floor tile. Unless further asbestos sampling is conducted, the detection of asbestos in sample HA308-1 indicates the floor tiles observed in the single-family residences of the subject property should be presumed to be a Category I non-friable ACM as long as the floor tiles are maintained in place or removed using methods that will not cause the tiles to be friable.

<u>Drywall Wall (HA306-1)</u>: Laboratory analysis detected 5% chrysotile asbestos in the joint compound of drywall sample HA30-1. Unless further asbestos sampling is conducted, the detection of asbestos in the joint compound of sample HA306-1 indicates the drywall observed in the single-family residences of the subject property should be presumed to be a RACM containing more than 1% asbestos with a high probability of becoming crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations.



### 495 Haley Street Single-Family Residence:

<u>Drywall Wall (HA203-1)</u>: Laboratory analysis detected 4% chrysotile asbestos in the skim coat of drywall sample HA203-1. Unless further asbestos sampling is conducted, the detection of asbestos in the skim coat of sample HA203-1 indicates the drywall observed in the single-family residences of the subject property should be presumed to be a RACM containing more than 1% asbestos with a high probability of becoming crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations.

### Lead-Based Paint

The paint chip samples and corresponding percent (%) of lead detected are noted below:

<u>LBP 600: 477 Frasier Street Interior Paint</u>: Laboratory analysis detected 0.366% lead in the paint chip sample. The paint chip sample represents the building's interior paint.

<u>LBP 601: 477 Frasier Street Exterior Paint</u>: Laboratory analysis detected 0.017% lead in the paint chip sample. The paint chip sample represents the building's exterior paint.

<u>LBP 1: 487 Frasier Street Exterior Paint</u>: Laboratory analysis detected 3.565% lead in the paint chip sample. The paint chip sample represents the building's exterior window paint.

<u>LBP 2: 487 Frasier Street Interior Paint</u>: Laboratory analysis detected 0.035% lead in the paint chip sample. The paint chip sample represents the building's exterior paint.

<u>LBP 400: 494 Frasier Street Exterior Paint</u>: Laboratory analysis detected 2.515% lead in the paint chip sample. The paint chip sample represents the building's interior paint.

<u>LBP 401: 494 Frasier Street Interior Paint</u>: Laboratory analysis detected 0.078% lead in the paint chip sample. The paint chip sample represents the building's interior and exterior paint.

<u>LBP 500: 275 Manget Street Interior Paint</u>: Laboratory analysis detected no lead in the paint chip sample. The paint chip sample represents the building's interior paint.

<u>LBP 501: 275 Manget Street Exterior Paint</u>: Laboratory analysis detected 0.064% lead in the paint chip sample. The paint chip sample represents the building's exterior paint.

<u>LBP 300: 489 Haley Street Interior Paint</u>: Laboratory analysis detected 0.023% lead in the paint chip sample. The paint chip sample represents the building's exterior paint.



<u>LBP 201: 495 Haley Street Exterior Paint</u>: Laboratory analysis detected 0.965% lead in the paint chip sample. The paint chip sample represents the building's exterior paint.

The results of the paint chip tests are presented in the Appendix.

### **CONCLUSIONS AND RECOMMENDATIONS**

The detection of lead in the paint chip samples except for the interior paint chip sample LBP 500 collected from 275 Manget Street indicates that lead-based paint was applied to the interior and exterior of the subject property buildings. Demolition debris from commercial projects consisting of components painted with lead-based paint requires Toxic Characteristic (TC) analysis for lead. When the demolition debris does not exhibit TC for lead that exceeds the regulatory threshold of 5 milligrams per kilogram as a hazardous waste, then the waste may be disposed of in a permitted municipal solid waste landfill or a permitted construction and demolition debris landfill. Materials containing lead paint are regulated by the Occupational Safety and Health Administration (OSHA) under its worker protection regulations.

Unless further asbestos sampling is conducted, the detection of asbestos associated with drywall ceilings and walls indicates the drywall observed in the apartment buildings and single-family residences of the subject property should be presumed to be a RACM containing more than 1% asbestos with a high probability of becoming crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations.

Unless further asbestos sampling is conducted, the detection of asbestos associated with floor tiles, shingle roof systems, and cement board siding indicates the floor tiles, shingle roof systems, and cement board siding observed in the apartment buildings and single-family residences of the subject property should be presumed to be a Category I non-friable ACM as long as the materials are maintained in place or removed using methods that will not cause the materials to be friable.

Prior to renovation or demolition, a licensed asbestos abatement contractor should remove and dispose of the building's presumed asbestos containing metal roof system. Provided the Marietta Redevelopment Corporation assumes the liability of roof leaks, the roof system can be cored to collect samples of roofing material (shingle, tar, felt, paper, etc.) to assess the presence or absence of asbestos minerals.

Prior to renovation or demolition, a licensed asbestos abatement contractor should remove and dispose of the presumed asbestos containing building materials of the subject property. Georgia EPD requires notifications for demolition of ACBMs encompassing 10 square feet or greater. Additionally, ACBMs encompassing at least 10 square feet are regulated by the U.S. Environmental Protection Agency (USEPA) under the National Emission Standards for Hazardous Air Pollutants (NESHAP) and also by the Occupational Safety and Health Administration (OSHA) under its worker protection regulations. These regulations require special handling and disposal procedures when asbestos containing materials are disturbed.



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Geo-Hydro Engineers, Inc. has appreciated the opportunity to perform this environmental testing. If you have any questions concerning this report, or if we can be of further assistance, please call us.

Sincerely,

GEO-HYDRO ENGINEERS, INC.

John F. O'Brien, CHMM

Senior Environmental Scientist/Site Inspector

Email: jobrien@geohydro.com

JFO/MOS/sh/env/reports/2005/057929.01acm-lbp.doc



### **FIGURES**





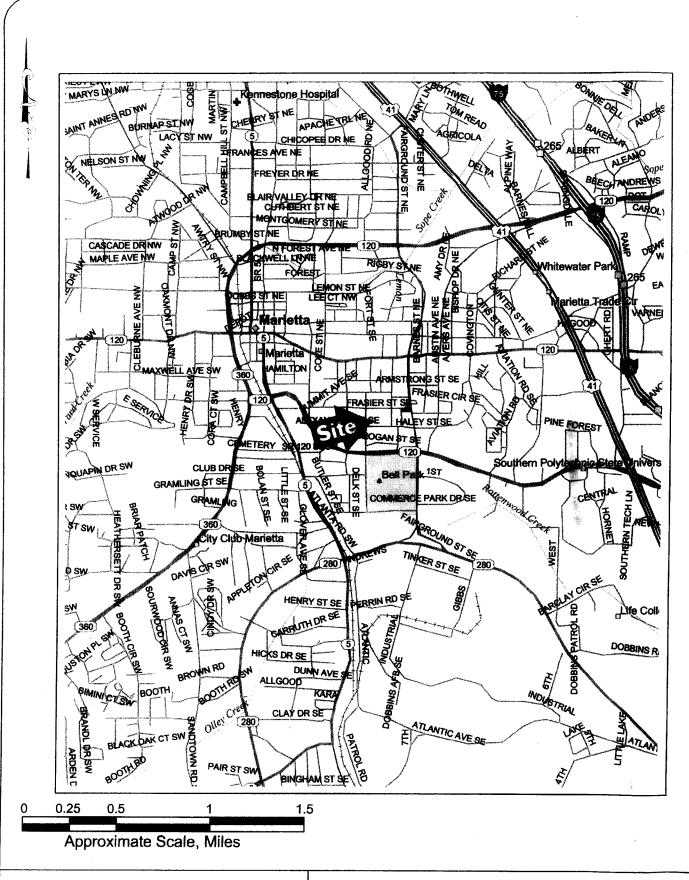


Figure 1: Site Location Plan

Manget Street Redevelopment Project Cobb County, Georgia Geo-Hydro Project Number 057929.01



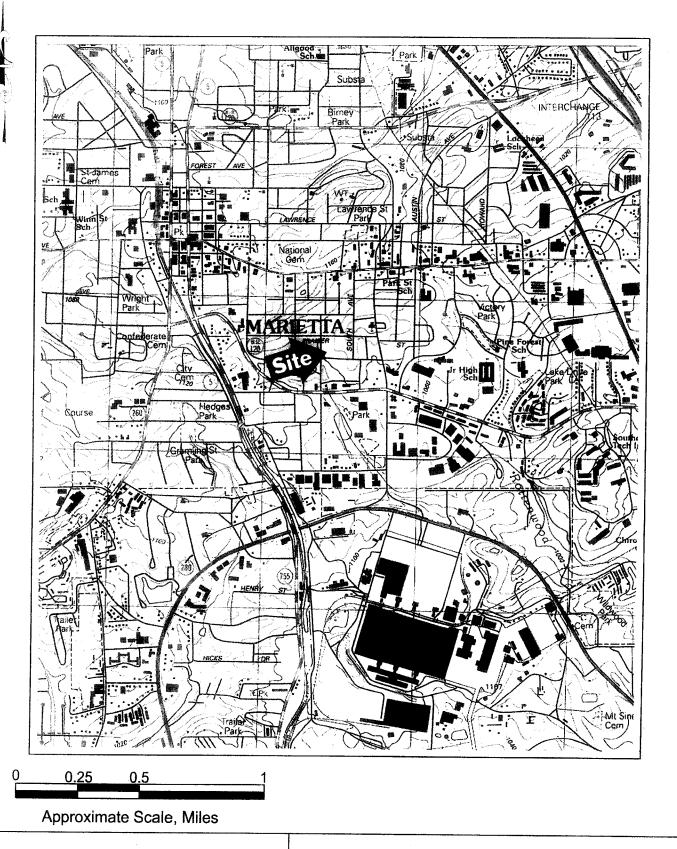


Figure 2: USGS Topographic Quadrangle (Marietta, Georgia Quadrangle)

Manget Street Redevelopment Project Cobb County, Georgia Geo-Hydro Project Number 057929.01

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Residential		lsitnəbisə?	d			Manget Street Redevelopment Project Cobb County, Georgia Geo-Hydro Project Numbers 057929.01
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House	Frasier St. Frasier St. Scouth Ave	246 South Ave.	507 Haley St.			Manget Street Redevel Cobb County, Georgia Geo-Hydro Project Nur
Ø			499 Haley St.			
497 Frasier St.	486 Frasier St.	Property	495 Haley St.	ential		te Plan
-487 Frasier St.	476 Frasier St.	Subject Property	489 Haley St.	Residential		Figure 3: Site Plan
477 Frasier St.	468 Frasier St.		467 Haley St.			
House	Tass 252 25. 32 25. St. Manget St. 12	275 265 Manget St. Manget S	도 기 기 기 기 기 기 기 기 기 기 기 기 기 기 기 기 기 기 기			nsformer
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SUSPECT ASBESTOS SAMPLE LABORATORY REPORT



### **ATLANTA**

Corporate Headquarters 3945 Lakefield Court Suwanee, GA 30024 (770) 866-3200 FAX (770) 866-3259



February 21, 2005

LOS ANGELES

3020 Old Ranch Parkway

Suite 300

Seal Beach, CA 90740

(562) 799-5530

FAX (\$62) 799-5531

John O'Brien

Geo-Hydro Engineers

1000 Cobb Place Boulevard Suite 290

Kennesaw, GA 30144

RE: PLM Sample Analysis

057929.01 / Frasier Street Apartment Bldg.

PHOENIX 903 Scuth Rural Road

cum Hurai Hoa

#101-388 Tempe, AZ 85281

(480) 239-0602

FAX (602) 470-2655

RALEIGH 616 Hutton Street

Suite 101

Raleigh, NC 27606

(919) 829-7041

FAX (919) 829-5518

SUNNYVALE
285 North Wolfe Road

Suite 101

Sunnyvale, CA 94085

(408) 737-9700

FAX (408) 737-9791

Dear Mr. O'Brien:

Enclosed is a summary and the analysis of the samples which were delivered to MAS on February 18, 2005. It was requested that we analyze these samples using polarized light microscopy (PLM) to determine the percentage of asbestos.

The samples were analyzed in accordance with EPA document 600/R-93/116, 'Method for the Determination of Asbestos in Bulk Building Materials'. These analysis results relate only to the specific items analyzed. Any partial reproduction of the Bulk Analysis Report may not be made without the consent of Materials Analytical Services. This report may not be used to imply product endorsement or certification by Materials Analytical Services, the National Voluntary Laboratory Accreditation Program (EPA), or the U.S. Government.

Materials Analytical Services appreciates this opportunity to have been of service to you. We look forward to working with you on future projects.

Sincerely.

William B. Egeland, P.G.

Enc. M35103

www.mastest.com

# MATERIALS ANALYTICAL SERVICES, INC.

3945 LAKEFIELD COURT

SUWANEE, GA 30024

(770) 866-3200

Client: Geo-Hydro Engineers Job Name: Frasier Street Apartment Bldg.

Job Number: 057929.01

Reviewer:

Summary of Results of analysis by Polarized Light Microscopy (PLM)

CLIENT#	MAS ID# - SPL#	LOCATION	MATERIAL	ANALYSIS
HA601-1	M35103- 001	477 Frasier kitchen room F	floor tile black & white w/brown mastic	NO ASBESTOS OBSERVED
HA602-1	M35103- 002a	477 Frasier bath room E	stiple ceiling/drywall	NO ASBESTOS OBSERVED
HA602-1	M35103- 002b	477 Frasier bath room E	skimcoat between stiple ceiling & drywall	4% Chrysotile
HA602-2	M35103- 003	477 Frasier bath room I	stiple ceiling/drywall	NO ASBESTOS OBSERVED
HA603-1	M35103- 004a	477 Frasier room J	popcorn ceiling/drywall	NO ASBESTOS OBSERVED
HA603-1	M35103- 004b	477 Frasier room J	skimcoats between popcom ceiling finish & drywall	5% Chrysotile
HA603-2	M35103- 005	477 Frasicr room B	popcom ceiling/drywall	NO ASBESTOS OBSERVED
HA604-1	M35103- 006a	477 Frasier room C wall	lextured (paints) drywall	NO ASBESTOS OBSERVED
HA604-1	M35103-006b	477 Frasier room C wall	Skimcoat between textured (paints) & drywall	3% Chrysotile
HA604-2	M35103- 007a	477 Frasier room K wall	textured drywall	NO ASBESTOS OBSERVED
HA604-2	M35103- 007b	477 Frasier room K wall	Skimcoat between textured (paints) & drywall	3% Chrysotile

The samples were analyzed in accordance with EPA document 600/R-93/116, "Method for the Determination of Asbestos in Bulk Building Materials". This report relates only to items tested as received, and may not be used to claim endorsement or certification by Materials Analytical Services, the National Voluntary Laboratory Accreditation Program (EPA), or the U.S. Government. This report may not be reproduced except in full without the approval of Materials Analytical Services, Incorporated (NVLAP # 101235).

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Co. Name: Gco-Hydro Engineers Phone: 770-726-7/00 Address: 1000 Cobb Race Blv Fax: 770-726-530

Krunesow Georga 30/44

70-426-5209

3945 Lakefield Court Suwanee, Georgia 30024 PH: (770) 866-3200 FAX: (770) 866-3259

Project #: Project Name: Work Area Description: Project Representative: MAS Project Number.

057929,01 Aportment Blds

Sheet

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16 FEB05	HA691-1	1777 Frasier - Kitchen Room F	Moor Tile Black + labore
			Mastic Brown
	HA602-1	477 Frasier - Bath Room E	Stiple Certing / Drywall
	HA602-2	477 Frager - Both Room I	Stiple Ceiling / Dry Wall
	MA 603-1	477 Frager - Room J	Porcon Ceilin / Dry wall
	HA603-2	477 Frasier - Room B	Ropcorn Colon / Dry Wall
1	MA604-1	477 Frasier - Room C (hall)	Textura Devicall
	HA604-2	477 Frasier - Room K (Wall)	Bothund Dry Leal
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Prose show % ashortes in joint companie separate from do osberitos in dryhall.

Proj#-Spl	#	M35103 - 001	Analyst	Paul Hess		Date	2/21/2005
ClientNar	me Geo-	Hydro Engineers			ClientSpl	HA601	-1
Location	477	Frasier kitchen room F					
Type_Ma	t floor	tile black & white w/br	own mastic				
Gross Visual	Marbled	white fine grained tile	with gummyam	ber adhesive,	, woody del	oris	
		OPTICAL D	ATA FOR AS	BESTOS IDE	NTIFICATI	ON	
Morp	hology						
	hroism						
Refract	t Index						
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Chrysof	tile	***************************************					
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Anthop	hyllite	**************					
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OTHER	FIBRO	US COMPONENTS					
Cellulose	e -rib&wo	ody		4			
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NON FI	BROUS	COMPONENTS	<del></del>		<del>-</del>		
Mica		<u> </u>		X			
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Binder		· · · · · · · · · · · · · · · · · · ·		X			
					<del>,</del>		
Binder [	Description	on					
•	Commen	ts $X = Materials determined$	cted.				
		<del></del>					

Proj#-Spl#	M35103 - 002a	Analyst Paul Hess	Date 2/21/2005
ClientName	Geo-Hydro Engineers	ClientSpl	HA602-1
Location	477 Frasier bath room E		
Type_Mat	stiple ceiling/drywall		
Gross <u>Wh</u> Visual	nite stipled compound on paint / ta	an felt on off-white chalky compou	ınd
	OPTICAL DATA	FOR ASBESTOS IDENTIFICATI	ON
Morphol	oav		
Pleochroi			
Refract Inc	dex		
7	gn^		
Extinct	· · · · · · · · · · · · · · · · · · ·		
Birefringe	nce Nelt		
Fiber Na	· · · · · · · · · · · · · · · · · · ·		
ASBESTO	S MINERALS	EST. VOL. % NO ASBESTOS OBSERVED	
Chrysotile.	******		
Amosite	••••••		
		W-044-04-04-04-04-04-04-04-04-04-04-04-04	
	Actinolite		
Anthophyll	ite		
OTHER FI	BROUS COMPONENTS		
Cellulose -ri	bbony	15	
NON FIBR	OUS COMPONENTS		
Opaques		X	
Mineral grain	ns	X	
Binder		Χ	
Binder Des	cription		
Cor	mments X = Materials detected.		

Proj#-Spl#		M35103 - 002b	Analyst Paul Hess	Date 2/21/2005
lientName	Geo-Hy	dro Engineers	ClientSpl	HA602-1
ocation .	477 Fra	sier bath room E		
ype_Mat	skimco	at between stiple ceilin	ng & drywall	
Gross Gol Visual	den tan	fine grained compoun	d between stipleling on paint and dry	ywall
		OPTICAL DA	TA FOR ASBESTOS IDENTIFICAT	ION
Morpholo	av w	avy		The state of the s
Pleochrois		one		
Refract Ind		550/1.545		
Sig	n^ pc	sitive		
Extincti	on pa	rallel		And the state of t
Birefringen	ce lo	w		
M	elt no	)		
Fiber Nar	me Cl	hrysotile		
ASBESTOS	S MINE	RALS	EST. VOL. %	
Chrysotile Amosite Crocidolite. Tremolite/A Anthophylli	ctinolit	e	4	
OTHER FIE	BROUS	COMPONENTS		
NON FIBRO	ous co	OMPONENTS		
Mica			X	
Mica Mineral grain	s		X	
Mineral grain	s		X X X	
Mica Mineral grain Binder Binder Desc			X	

Proj#-SpI#	M35103 - 003	Analyst Paul Hess	Date 2/21/2005
ClientName	Geo-Hydro Engineers	ClientSpl	HA602-2
Location	477 Frasier bath room I		
Type_Mat	stiple ceiling/drywall		
Gross Of Visual	ff-white paint on white stipled com	npound on tan felt on off-white chal	ky compound
	OPTICAL DATA	A FOR ASBESTOS IDENTIFICATI	ON
Morphol	loay		
Pleochro			
Refract In			
	ign^		A CONTRACTOR OF THE CONTRACTOR
Extinc	<u> </u>		
Birefringe	ence Melt		
Fiber Na			
ASBESTO	OS MINERALS	EST. VOL. % NO ASBESTOS OBSERVED	
Chrysotile	<b>.</b>		
Crocidolit	e		
Tremolite/	Actinolite		
Anthophyl	llite		
OTHER F	IBROUS COMPONENTS		
Cellulose -r	ribbony	15	
NON FIBR	ROUS COMPONENTS		
Opaques		X	
Mineral grai	ins	X	
Binder		×	
Binder Des	scription		
Co	mments X = Materials detected	1.	

Proj#-Spl#	f 1	M35103 - 004a	Analyst	Paul Hess		Date	2/21/2005
ClientNam	e Geo-Hy	dro Engineers			ClientSpl	HA603	-1
Location	477 Fra	sier room J					
Type_Mat	popcorr	n ceiling/drywall					
Gross <u>l</u> Visual <u>\</u>	_ight beige white chalky	paint on white fine graine y compound	d compo	und with foa	m pellets / T	an ribbo	ny fiber felt on off-
		OPTICAL DATA	FOR ASI	BESTOS ID	ENTIFICATI	ON	
Morph	ology		[				promption of the state of the s
Pleoch							
Refract	Index						
	Sign^						
	ection						
Birefring	-						
Fiber	Melt						
ribei	ivalile					<u></u>	
ASBEST	OS MINE	RALS		EST. VOL BESTOS OBS			
Chrysoti	le				<del></del>		
-	ie						
	ite						
	e/Actinolite						
	yllite			· · · · · · · · ·			
•	-				<del>"" : '</del>		
OTHER	FIBROUS	COMPONENTS					
Cellulose	-ribbony			17			
		· · · · · · · · · · · · · · · · · · ·					
					<del></del>		
NON FIE	ROUS CO	DMPONENTS					
Synthetic	foam			X			
Opaques				Х			
Mineral gr	ains			Х			
Binder				. X			
Binder D	escription					·	
C	omments	X = Materials detected.					
			·	<del></del>			

Proj#-Spl#	M351	03 - 004b	Analyst	Paul Hess		Date	2/21/2005
ClientName	Geo-Hydro E	ingineers			ClientSpl	HA60	3-1
Location	477 Frasier r	oom J					
Type_Mat	skimcoats be	etween popcorn c	eiling finish	& drywall			
Gross Gol Visual	den fine grair	ned compounds v	vith imbedde	d ribbony fit	per tape		
		OPTICAL DA	TA FOR AS	BESTOS ID	ENTIFICATI	ON	
Morpholo	ogy wavy						
Pleochrois							
Refract Inc	<del></del>						
Sig	·						
Extincti	<u> </u>		_				
Birefringer	<b></b>		_			<del></del>	
	lelt no						
Fiber Na	me Chryso	tile					
ASBESTO	S MINERAL	s		EST. VOL	. %		
Chrysofile				5			
-							
	•••••		<del></del>	<del></del>			
	Actinolite						
	ite			<del> </del>	<del></del>		
OTHER FIE	BROUS CO	MPONENTS					
Cellulose -rit	bbony			17			
			<b></b>				
			•				
			•				
NON FIBRO	OUS COMP	ONENTS					
Opaques				Х			
Mica				Х			
Mineral grain	ns			Х			
Binder				Х			
Binder Desc	cription						
Con	nments <u>X =</u>	Materials detecte	ed.				

Proj#-Spl#	M35103 - 005	Analyst Paul Hess		Date	2/21/2005
ClientName	Geo-Hydro Engineers		ClientSpl	HA603	-2
Location	477 Frasier room B				
Type_Mat	popcorn ceiling/drywall				
Gross <u>Lig</u> Visual <u>whi</u>	ht beige paint on white fine grai ite chalky compound	ned compound with foa	m pellets on	Tan ribl	bony fiber felt on off-
	OPTICAL DAT	A FOR ASBESTOS ID	ENTIFICATI	ON	
Morpholo	ogy			p	
Pleochroi	sm				
Refract Inc					
-	3n^				
Extinct Birefringer					
_	lelt				
Fiber Na	me				
ASBESTO	S MINERALS	EST. VOL.			
Chrvsotile.	•••••				
-	•••••				
Crocidolite					
Tremolite/	Actinolite				
Anthophyll	ite				
OTHER FI	BROUS COMPONENTS				
Cellulose -ril	bbony	15	<del></del>		
	OUS COMPONENTS				
Synthetic for	am	X			
Opaques		X			
Mineral grain	ns	X			
Binder		X			
Binder Des	cription				
Con	mments X = Materials detecte	d			

Proj#-Spl#	M35103 - 006a	Analyst Paul Hess	Date 2/21/2005
ClientName	Geo-Hydro Engineers	ClientSpl	HA604-1
Location	477 Frasier room C wall		
Type_Mat	textured (paints) drywall		
Gross Mul Visual	ti layered paints / tan ribbony fib	er felt on off-white chalky compour	nd
	OPTICAL DATA	FOR ASBESTOS IDENTIFICATION	ON
Morpholo	av l		
Pleochrois			
Refract Ind	lex		
Sig	n^		The state of the s
Extincti			
Birefringen			
	elt		
Fiber Na	me		
ASBESTO	S MINERALS	EST. VOL. % NO ASBESTOS OBSERVED	
Chrvsotile			
	***************************************		
Crocidolite.	***************************************		
Tremolite/A	ctinolite		
Anthophylli	te		
OTHER FIE	BROUS COMPONENTS		
Cellulose -rib		15	
Ochdioge - Hi		13	
NON FIBRO	DUS COMPONENTS		•
Opaques		X	•
Mineral grain	Š	X	
Binder		×	
Binder Desc	ription		
Com	ments X = Materials detected.		
33H			

Proj#-SpI#		/135103 <u>-</u> 00	)6b	Analyst	Paul Hess		Date	2/21/2005
ClientName	Geo-Hy	dro Engine	ers			ClientSpl	HA604	4-1
Location	477 Fra:	sier room C	wall					
Type_Mat	Skimcoa	at between	textured (pair	nts) & dryv	vall			
		grained co	<del></del>					
		ОР	TICAL DATA	FOR ASI	BESTOS ID	ENTIFICATI	ON	
Morphol	logy wa	vy		[				
Pleochro	·							
Refract In	dex 1.5	550/1.545						
Si	gn^ po	sitive						
Extinc	tion pa	rallel						
Birefringe	nce lov	<u>v</u>						
ı	Melt no				,			
Fiber Na	ame Ch	rysotile		<u></u>				
ASBESTO	S MINE	RALS			EST. VOL	. %		
Chrysotile					3			
Amosite								
Crocidolite	e							
Tremolite/								
Anthophyl						<del></del>		
				····				
OTHER F	BROUS	COMPON	IENTS					
Cellulose -r		···			Trace			
				<del></del>				
NON FIBR	ous co	OMPONEN	ITS					
Mica				· · · · · · · · · · · · · · · · · · ·	X			
Mineral grai	ns				Х			
Binder					Х		,	
Binder Des	scription	***************************************	· · · · · · · · · · · · · · · · · · ·	······································				
Со	mments	X = Mater	ials detected					

Proj#-Spl#	M35103 - 007a	Analyst Paul Hess	Date 2/21/2005
ClientName	Geo-Hydro Engineers	ClientSpl	HA604-2
Location	477 Frasier room K wall		
Type_Mat	textured drywall		
Gross <u>Mu</u> Visual	lti layered paints / tan ribbony f	ber felt on off-white chalky compour	nd
	OPTICAL DAT	A FOR ASBESTOS IDENTIFICATI	ON
Morpholo	ogy		
Pleochroi			
Refract Inc	dex		
-	gn^		
Extinct			
Birefringe			
r Fiber Na	felt		
ribei Na	ine [		
ASBESTO	S MINERALS	EST. VOL. % NO ASBESTOS OBSERVED	
Chrvsotile.	······		
=			
Crocidolite			
	Actinolite		
Anthophyll	ite		
OTHER FI	BROUS COMPONENTS		
Cellulose -ri	bbony	15	
		- della sanda.	
NON FIBR	OUS COMPONENTS	was to the second secon	
Opaques		X	
Mineral grain	ns	X	
Binder		X	
Binder Des	cription		
Cor	mments X = Materials detecte	d.	

Proj#-Spl#	M	35103 - 0	07b		Analyst	Paul Hess		Date	2/21/2005
ClientName	Geo-Hyd	ro Engine	ers				ClientSpl	HA604	4-2
Location	477 Fras	ier room	K wall						
Гуре_Mat	Skimcoat	t betweer	textured	d (paint	s) & dryv	vall			
	lden fine g								
* (30a)									
	ſ		271041			2070010			
		OI	TICAL	DATA	FOR AS	BESTOS ID	ENTIFICAT	ION	
Morpholo	ogy wav				[				
Pleochroi	<u> </u>	ie	.,						
Refract Inc	dex 1.5	50/1.545							
Sig	gn^ pos	itive							
Extinct	ion para	allel							
Birefringer	nce low								
M	lelt no								
Fiber Na	me Chr	ysotile							
ASBESTO	S MINER	RALS				EST. VOL	. %		
Chrysotile.						3			
Amosite									
Crocidolite									
Tremolite/									
Anthophyll									
Anthophyn							·····		
OTHER FI	BROUS (	СОМРО	NENTS						
Cellulose -ril						Ггасе			
	-				***************************************	· · · · · · · · · · · · · · · · · · ·			
		· · · · · · · · · · · · · · · · · · ·			-		<del></del>		
					***				
NON FIBRO	ous coi	MPONE	NTS		***************************************				
Mica						Х			
Mineral grain	าธ		•			Х			
Binder						Х			
Binder Des	cription								<del></del>
Con	nments .	X = Mate	rials det	ected.					
	-				-	", • · · · <u>, </u>			

### **ATLANTA**

Corporate Headquarters 3945 Lakefield Court Suwanee, GA 30024 (770) 866-3200 FAX (770) 866-3259



February 21, 2005

LOS ANGELES

3020 Old Banch Patkway

Suite 300

Seal Beach, CA 90740

(562) 799-5530

FAX (562) 799-5531

John O'Brien

Geo-Hydro Engineers

1000 Cobb Place Boulevard Suite 290

Kennesaw, GA 30144

RE: PLM Sample Analysis

057929.01 / Frasier Street Apartment Bldg.

PHOENIX

903 South Rural Road

#101-388

Tempe, AZ 85281

(480) 239-0602

FAX (602) 470-2655

RALEIGH

616 Hulton Street

Suite 101

Rateigh, NC 27606

(919) 829-7041

FAX (919) 829-5518

SUNNYVALE 285 North Wolfe Road

(408) 737-9700

Suite 101 Sunnyvale, CA 94085 FAX (408) 737-9791

Dear Mr. O'Brien:

Enclosed is a summary and the analysis of the samples which were delivered to MAS on February 18, 2005. It was requested that we analyze these samples using polarized light microscopy (PLM) to determine the percentage of asbestos.

The samples were analyzed in accordance with EPA document 600/R-93/116, 'Method for the Determination of Asbestos in Bulk Building Materials'. These analysis results relate only to the specific items analyzed. Any partial reproduction of the Bulk Analysis Report may not be made without the consent of Materials Analytical Services. This report may not be used to imply product endorsement or certification by Materials Analytical Services, the National Voluntary Laboratory Accreditation Program (EPA), or the U.S. Government.

Materials Analytical Services appreciates this opportunity to have been of service to you. We look forward to working with you on future projects.

Sincerely,

William B. Egeland, P.G.

Enc. M35101

www.mastest.com

REDUEST E-MAIL RESULTS IN 48 HOURS

M35101 e-mail Jobriene geohydro.com

CHAIN	)   	1/	JUS	TODY
	A	A		Co

Address:

. Name: Geo-Hydro Engineers Phone: 770-426-7100 1000 Cobb Place Blod Fax: 770 426-5209

Kennesow, Georgia 30144

3945 Lakefield Court Suwanee, Georgia 30024

PH: (770) 866-3200 FAX: (770) 866-3259 Project #:

Project Name:

Work Area Description: Project Representative:

MAS Project Number:

057929,01

Frasier Street

Apartment BIRA

Sheet

	St. dlynt	and to the transfer of the control o	
544005	HAI-I	487 Frasier - Rear	Brown Fibrous Siding
1	1-6 AH	487 Frasier - Front Awning Roof	Roof Shingle
	HA3-1	487 Frasin - Room 487-1	Floor Tile (IXI white)/Mostic Beise
	HAS-I	487 Fruster - Room 487- Ce	Text. Calling pory wall tout Comp
	HA6-1	1987 Frasier - Room 487- 2	Drywall (wall 15+ Floor)
	HAG-3	487 Frasier - Room 487-24	Dry wall (wall - > Floor)
*	HA6-4	487 Frasier - Room 487-31	Dry wall ( Ceiling - 2 hd 12/304)
	-		-
		·	
			·
			_

	Legal Call Charles			- 33. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3.
٠	17FB05	UPS		h/
First Transfer By:	for OB	.`	DIKINE	dilla
Second Transfer By:			11010	17000
Third Transfer By:				1./

Please show do a shortes in Just compound separate from dry unil % asbertos.

# MATERIALS ANALYTICAL SERVICES, INC.

3945 LAKEFIELD COURT

SUWANEE, GA 30024

(770) 866-3200

Client: Geo-Hydro Engineers

Job Name: Frasier Street Apartment Bldg.

Job Number: 057929.01

Reviewer:

# Summary of Results of analysis by Polarized Light Microscopy (PLM)

CLIENT#	MAS ID # - SPL # LOCATION	LOCATION	MATERIAL	ANALYSIS
HAI-1	M35101- 001	487 Frasier-rear	brown fibrous siding	NO ASBESTOS OBSERVED
HA2-1	M35101- 002	487 Frasier-front awning roof	roof shingle	NO ASBESTOS OBSERVED
HA3-1	M35101- 003	487 Frasier-room 487-1	white floor tile & beige mastic	NO ASBESTOS OBSERVED
HA5-1	M35101- 004a	487 Frasier-room 487-6	textured ceiling/joint compound	3% Chrysotile
HA5-1	M35101- 004b	487 Frasier-room 487-6	drywall	NO ASBESTOS OBSERVED
HA6-1	M35101- 005	487 Frasier-room 487-2, wall 1st floor	drywail	NO ASBESTOS OBSERVED
HA6-3	M35101- 006	487 Frasier-room 487-24, wall 2nd floor	drywail	NO ASBESTOS OBSERVED
HA6-4	M35101- 007	487 Frasier-room 487-31, ceiling 2nd floor	drywail	NO ASBESTOS OBSERVED

The samples were analyzed in accordance with EPA document 600/R-93/116, "Method for the Determination of Asbestos in Bulk Building Materials". This report relates only to items tested as received, and may not be used to claim endorsement or certification by Materials Analytical Services, the National Voluntary Laboratory Accreditation Program (EPA), or the U.S. Government. This report may not be reproduced except in full without the approval of Materials Analytical Services, incorporated (NVLAP # 101235).

	M35101 - 001	Analyst Paul Hess	Date 2/21/2005
lientName	Geo-Hydro Engineers	ClientSpl	HA1-1
ocation	487 Frasier-rear	-	
/pe_Mat	brown fibrous siding		
	f-white paint on brown compre	essed fibrous body	
visual	-write paint on blown compre	essed libitus body	
	OPTICAL D	ATA FOR ASBESTOS IDENTIFICAT	ION
Morphole	oav [		
Pleochroi			
Refract Inc			
	gn^		
Extinct	ion		
Birefringe	nce		
	Melt		
Fiber Na	me		
ASBESTO	S MINERALS	EST. VOL. % NO ASBESTOS OBSERVED	
Chrysotile.			
Δmosite	***************************************		
~!!!!OS!!C			
	<b>3</b>	<u> </u>	
Crocidolite Tremolite/ <i>i</i>	Actinolite		
Crocidolite Tremolite/ <i>i</i>			
Crocidolite Tremolite// Anthophyll	Actinolitelite		
Crocidolite Tremolite// Anthophyll DTHER FI	Actinolite lite BROUS COMPONENTS	97	
Crocidolite Tremolite// Anthophyll DTHER FI	Actinolite lite BROUS COMPONENTS	97	
Crocidolite Tremolite// Anthophyll DTHER FI	Actinolite lite BROUS COMPONENTS	97	
Crocidolite Tremolite// Anthophyll DTHER FI	Actinolite lite BROUS COMPONENTS	97	
Crocidolite Tremolite// Anthophyll DTHER FI	Actinolite lite BROUS COMPONENTS	97	
Crocidolite Tremolite// Anthophyll OTHER FI Cellulose -ri	Actinolite lite BROUS COMPONENTS	97	
Crocidolite Tremolite/ Anthophyll  OTHER FI  Cellulose -ri	Actinolite  BROUS COMPONENTS  b&woody	97 X	
Crocidolite Tremolite/ Anthophyll OTHER FI Cellulose -ri	Actinolite	X	
Crocidolite Fremolite/ Anthophyll  OTHER FI  Cellulose -ri  NON FIBR  Opaques	Actinolite	X X	
Crocidolite Tremolite// Anthophyll OTHER FI Cellulose -ri NON FIBR Opaques	Actinolite	X	
Crocidolite Tremolite// Anthophyll OTHER FI Cellulose -ri NON FIBR Opaques	Actinolite	X X	
Crocidolite Tremolite/ Anthophyll DTHER FI Cellulose -ri NON FIBR Opaques Mineral grain	BROUS COMPONENTS b&woody  OUS COMPONENTS	X X	
Crocidolite Tremolite// Anthophyll OTHER FI Cellulose -ri	BROUS COMPONENTS b&woody  OUS COMPONENTS	X X X	
Crocidolite Tremolite// Anthophyll OTHER FI Cellulose -ri  NON FIBR  Dpaques  Mineral grain Binder	BROUS COMPONENTS b&woody  OUS COMPONENTS	X X X	

ClientName Geo-Hydro Engineers ClientSpl HA2-1  Agr Frasier-front awning roof  Cype_Mat roof shingle  Gray granules in tar with glass fibers, black glossy tar mastic  OPTICAL DATA FOR ASBESTOS IDENTIFICATION  Morphology Pleochroism Refract index Sign A Extinction  Birefringence Melt Fiber Name  ASBESTOS MINERALS  EST. VOL. % NO ASBESTOS OBSERVED  Chrysotile	roj#-Spl#	M35101 - 002	Analyst Paul Hess	Date 2/21/2005
Agriculture	lientName G	eo-Hydro Engineers	ClientSpl	HA2-1
OPTICAL DATA FOR ASBESTOS IDENTIFICATION  Morphology Pleochroism Refract Index Sign^ Extinction Birefringence Melt Fiber Name  ASBESTOS MINERALS  EST. VOL. % NO ASBESTOS OBSERVED  Chrysotile	ocation 48	37 Frasier-front awning roof		
OPTICAL DATA FOR ASBESTOS IDENTIFICATION  Morphology Pleochroism Refract Index Sign^ Extinction Birefringence Melt Fiber Name  ASBESTOS MINERALS  Chrysotile	<b>rpe_Mat</b> ro	of shingle		
Morphology Pleochroism Refract Index Sign^ Extinction Birefringence Melt Fiber Name  ASBESTOS MINERALS  Chrysotile Amosite Crocidolite Anthophyllite  OTHER FIBROUS COMPONENTS  Fib glass -isotropic  NON FIBROUS COMPONENTS  Mineral grains Amosite  Nineral grains Amosite  Nineral grains Amosite  Mineral grains Amosite A	Gray	granules in tar with glass fiber	s, black glossy tar mastic	
Pleochroism Refract Index Sign^ Extinction Birefringence Melt Fiber Name  ASBESTOS MINERALS  Chrysotile		OPTICAL DATA	A FOR ASBESTOS IDENTIFICATI	ON
Pleochroism Refract Index Sign^ Extinction Birefringence Melt Fiber Name  ASBESTOS MINERALS  Chrysotile	Morphology			
Sign^ Extinction Birefringence Melt Fiber Name  ASBESTOS MINERALS  ASBESTOS MINERALS  EST. VOL. % NO ASBESTOS OBSERVED  Chrysotile				
Extinction Birefringence Melt Fiber Name  ASBESTOS MINERALS  EST. VOL. % NO ASBESTOS OBSERVED  Chrysotile	Refract Index	(		
Birefringence Melt Fiber Name  ASBESTOS MINERALS  EST. VOL. % NO ASBESTOS OBSERVED  Chrysotile				
Melt Fiber Name  ASBESTOS MINERALS  EST. VOL. % NO ASBESTOS OBSERVED  Chrysotile		<u> </u>		
ASBESTOS MINERALS  EST. VOL. % NO ASBESTOS OBSERVED  Chrysotile		<del></del>		
ASBESTOS MINERALS  EST. VOL. % NO ASBESTOS OBSERVED  Chrysotile				
NO ASBESTOS OBSERVED  Chrysotile	ribei ivailie			
Amosite	ASBESTOS	MINERALS		
Amosite	Chrysotile			
Tremolite/Actinolite	_			
Anthophyllite	Crocidolite	***************************************		
OTHER FIBROUS COMPONENTS  Fib glass -isotropic 18  NON FIBROUS COMPONENTS  Mineral grains X  Binder Description Bitumen	Tremolite/Act	inolite		
NON FIBROUS COMPONENTS  Mineral grains  Sinder  X  Binder Description  Bitumen	Anthophyllite			
NON FIBROUS COMPONENTS  Mineral grains Sinder  X  Binder Description  Bitumen	OTHER FIBR	OUS COMPONENTS		
NON FIBROUS COMPONENTS  Mineral grains  X Sinder  X Binder Description  Bitumen			18	
Mineral grains X Sinder X  Binder Description Bitumen	<u> </u>			
Mineral grains X Sinder X  Binder Description Bitumen				
Mineral grains X Sinder X  Binder Description Bitumen	<del></del>			
Mineral grains X Sinder X  Binder Description Bitumen				
Binder Description Bitumen	NON FIBROL	JS COMPONENTS		
Binder Description Bitumen				
Binder Description Bitumen				
Binder Description Bitumen	Mineral grains		X	
	Binder		X	
		-		
	Rinder Descri	ntion Bitumen		
Comments X = Materials detected.	Jinder Descil	Priori Ditamon		
Comments X = Materials detected.				
COMMUNICATION CONTROL	Comm	nents X = Materials detected	1	
	00.771	TOTAL A TALLOTTON GOLDOLOGO	-	

Proj#-Spl#	M35101 - 003	Analyst P	Paul Hess	Date 2	/21/2005
ClientName	Geo-Hydro Engineers		ClientSpl	HA3-1	
_ocation	487 Frasier-room 487-1				
Гуре_Mat	white floor tile & beige mastic				
Gross <u>Wh</u> Visual	nite fine grained tile with gray sm	nears, tan gur	mmy adhesive		
	OPTICAL DAT	A FOR ASBE	STOS IDENTIFICATI	ON	
Morpholo	ogy				
Pleochroi	ism				
Refract Inc					
	gn^				
Extinct		-			
Birefringer	Melt	-			
Fiber Na		1			
1 1201 110		J			
ASBESTO	S MINERALS		ST. VOL. %		
		NO ASB	ESTOS OBSERVED		
Chrysotile.					
Amosite					
Crocidolite	<b></b>				
	Actinolite				
Anthophyll	lite				
OTHER FI	BROUS COMPONENTS				
Cellulose -ri	bbony	Tr	ace		
•		<del></del>			
	V				
NON FIBR	OUS COMPONENTS				
	A STATE OF THE STA				
Mineral grain	ns		X		
Binder	<del></del>		X		
	**************************************				
Binder Des	cription			· · · · · · · · · · · · · · · · · · ·	
Со	mments X = Materials detecte	d.			

Proj#-Spl#	ŧ	M35101 - 004a		Paul Hess		Date	2/21/2005			
ClientNam	e Geo-l	Geo-Hydro Engineers			ClientSpl	HA5-1				
Location	487 F	rasier-room 487-6								
Type_Mat	textu	red ceiling/joint compound								
Gross <u>(</u> Visual <u> </u>	Off-white	ff-white paint on off-white fine grained compound.								
		OPTICAL DATA	FOR AS	BESTOS ID	ENTIFICATI	ON				
Morph	ology	wavy								
Pleochroism		none								
Refract Index		1.550/1.545								
	•	positive								
		parallel								
Birefring	_	low	ļ <u> </u>							
	Melt	no								
Fiber	Name	Chrysotile								
ASBES	TOS MII	NERALS		EST. VOL	. %					
Chrysotile			•	3						
		*********************	****							
Tremolite/Actinolite					·					
Anthophyllite										
OTHER	FIBRO	US COMPONENTS								
				<del>,</del>						
NON FIE	BROUS	COMPONENTS								
Opaques			Х							
Mica			Х							
Mineral grains				Х						
Binder				Х						
Binder D	)escripti	on								
(	Commer	X = Materials detected	l.							

Proj#-Spl#	M	35101 - 004b	Analyst	Paul Hess		Date	2/21/2005
ClientName	Geo-Hyd	Iro Engineers			ClientSpl	HA5-1	
ocation		ier-room 487-6					
Гуре_Mat	drywall		·····				
		ny fiber felt on light g	ray chalky co	ompound			
		OPTICAL DA	TA FOR AS	BESTOS ID	ENTIFICATI	ON	
Morpho	logy						
Pleochro							
Refract Ir	ndex						
S	ign^			per second			
Extino	tion						
Birefringe							
	Melt						
Fiber N	ame						
ASBEST	OS MINER	RALS	NO AS	EST. VOL BESTOS OBS			
Chrysotile	e						
=							
Crocidolii	te	**********					
Tremolite	/Actinolite	<b>.</b>					
Anthophy	ıllite						
OTHER F	IBROUS	COMPONENTS					
Cellulose -	ribbony			15			
		<del> </del>	***************************************				
		<del>, , , , , , , , , , , , , , , , , , , </del>			· · · · · · · · · · · · · · · · · · ·		
****			<del></del>				
***************************************							
NON FIBI	ROUS CO	MPONENTS					
Mineral gra	ains	<del></del>	·	Х			
Binder		· · · · · · · · · · · · · · · · · · ·		Х			
Binder De	escription					<u>.</u>	
Co	omments	X = Materials detec	ted.				